Title (en)

POLISHING ABRASIVE PARTICLE, PRODUCTION METHOD THEREFOR, POLISHING METHOD, POLISHING DEVICE, AND SLURRY

Title (de)

POLIERENDE SCHLEIFPARTIKEL, HERSTELLUNGSVERFAHREN DAFÜR, POLIERVERFAHREN, POLIERVORRICHTUNG UND AUFSCHLÄMMUNG

Title (fr)

PARTICULE ABRASIVE DE POLISSAGE, SON PROCÉDÉ DE PRODUCTION, PROCÉDÉ DE POLISSAGE, DISPOSITIF DE POLISSAGE, ET BOUILLIE

Publication

EP 3103851 B1 20220518 (EN)

Application

EP 15746755 A 20150119

Priority

- JP 2014021392 A 20140206
- JP 2014146604 A 20140717
- JP 2014239600 A 20141127
- JP 2015051175 W 20150119

Abstract (en)

[origin: US2016325398A1] [Solution] The object surface is polished using a wet polishing method. Slurry is produced by scattering abrasive particles into pure water. In the abrasive particle, where components which has a mechanochemical effect and which reacts to the friction heat generated in polishing the object material are joined with each other and integrated to a particle. There, respective component is joined with each other using a mechanical alloying process, while maintaining the inherent material properties. When the slurry is used in a lapping process of sapphire, silicon carbide, gallium nitride and the like, the polishing process can be substantially shortened and the processing cost is drastically reduced. Further, it secures a high quality of the polishing surface. The abrasive particle can be used repeatedly in the polishing process. Since the pH value of the slurry is around 3 to 9, it does not deteriorate working environment and the liquid-waste treatment is easy.

IPC 8 full level

C09K 3/14 (2006.01); **B24B 1/00** (2006.01); **B24B 37/00** (2012.01); **C09G 1/02** (2006.01); **H01L 21/304** (2006.01)

CPC (source: EP KR US)

B24B 37/044 (2013.01 - EP KR US); **B24B 37/245** (2013.01 - EP KR US); **C09G 1/02** (2013.01 - EP KR US); **C09K 3/1409** (2013.01 - KR); **C09K 3/1463** (2013.01 - US); **C09K 3/1472** (2013.01 - EP KR US); **H01L 21/02024** (2013.01 - EP US); **H01L 21/304** (2013.01 - KR); **H01L 21/30625** (2013.01 - KR)

Cited by

CN110511679A; US11781039B2; EP3561858B1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 10414021 B2 20190917; **US 2016325398 A1 20161110**; CA 2936498 A1 20150813; CA 2936498 C 20211130; CN 105940076 A 20160914; CN 105940076 B 20171229; EP 3103851 A1 20161214; EP 3103851 A4 20180530; EP 3103851 B1 20220518; KR 102441869 B1 20220907; KR 20160119082 A 20161012; TW 201534705 A 20150916; TW I661039 B 20190601

DOCDB simple family (application)

US 201515110320 A 20150119; CA 2936498 A 20150119; CN 201580006561 A 20150119; EP 15746755 A 20150119; KR 20167020806 A 20150119; TW 104103443 A 20150202